

Good Nutrition and Healthy Smiles

Good nutrition is not only necessary for general health, it also plays a key role in the development and protection of good oral health.

Being healthy means good oral health

Oral health is essential to general health and means more than healthy teeth and the absence of disease—it means that the teeth, gums and mouth are healthy, comfortable and functional. Oral health facilitates good nutrition as well. We need healthy teeth and gums to effectively chew and swallow our food and absorb nutrients essential for the body's general health. In turn, good nutrition and healthy eating promote good oral health.

The importance of healthy eating

Development of primary teeth starts during the second month of embryonic life, and these teeth begin to calcify before birth. Permanent teeth start to calcify just before birth and by age 8 years the crowns of all permanent teeth, except the third molar, are formed. What we eat and drink not only plays an important role in the development and protection of these teeth and gums—in fact, two of the most common diseases (tooth decay or cavities and gum disease) can be prevented by simply improving the diet. Gum disease affects the soft tissues that help support the teeth and is the leading cause of tooth loss in adults.

The following nutrients are important for good oral health:

- **Protein** is important for the formation of teeth. Malnutrition causes significant delay in eruption of primary teeth and studies suggest a relationship between early malnutrition and dental caries (under-developed teeth and under-calcified teeth are vulnerable to cavities).
- **Calcium, vitamin D, and fluoride** are needed to build strong teeth through the process called tooth

calcification. Vitamin D deficiency during childhood causes delay in appearance of the baby and permanent teeth, and creates problems in the order in which the teeth come in. Fluoride reduces dental decay by making it harder for the tooth enamel to break down, reducing the ability of bacteria to produce acid, and promoting mineral replacement.

- **Vitamins C and K** play an important role in keeping gums healthy. Vitamin C helps keep gum tissue strong and vitamin K helps control bleeding. Vitamin C deficiency affects gums and soft tissues that help support the teeth.
- **Vitamin A** deficiency during tooth formation is reported to interfere with tooth calcification and result in the incomplete development or underdevelopment of the enamel.
- **Riboflavin** deficiency results in inflammation of the tongue, and inflammation and cracking of the lips.

Eating habits that affect oral hygiene

Inappropriate use of a bottle

In many cases, early childhood caries is caused by children using a bottle or sippy cup with juice or other sugary drinks rather than water. This can happen when children are put to bed with a bottle, or when they drink through a bottle or sippy cup frequently during the day.

Food that is high in sugar or starch

While children and adolescents need diets that provide them with lots of energy, this doesn't mean that they should consume soft drinks and high sugar snacks throughout the day. Food that is high in sugar or starch (especially sticky foods), hard candies, soft drinks, fruit juices, cookies, pies, cakes and potato chips are linked to higher levels of cavity-causing bacteria. They can lead to cavities because they react with bacteria on the teeth to produce acids that eat away tooth enamel.

Frequency of eating

Besides good oral hygiene, frequency of eating is the most important factor related to dental caries. The more frequent the food intake, the greater the risk for caries, because a high frequency of eating encourages the growth of bacteria in the mouth that, in turn, leads to increased acidity in the oral cavity.

Reference

American Academy of Pediatrics. (2004). *Pediatric Nutrition Handbook, Fifth Edition*.



California Childcare Health Program
UCSF School of Nursing
cchp.ucsf.edu
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